

蝶と蛾 *Tyô to Ga*, **36** (4): 181-184, 1986

## Moths Collected from the Krakatau Islands and Panaitan Island, Indonesia\*

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**Abstract** Twelve species of moth were collected in 1982 by two Japanese expedition teams on the Krakatau Islands and Panaitan Island in Indonesia almost 100 years after the world-famous big eruption of Krakatau in 1883. They are listed together with their collecting data and brief remarks.

### Introduction

This paper constitutes a part of the faunistic studies on the insects of the Krakatau Islands in Indonesia. The islands and surroundings were surveyed in 1982 by two Japanese expedition teams at the centennial occasion after the world-famous big eruption of Krakatau in 1883 (see YUKAWA, 1984 for further details of the expeditions as well as the butterfly fauna of the islands, and see THORNTON, 1984 for the history of volcanic activities and of biological surveys).

Unfortunately the number of moth specimens collected from the islands in 1982 was relatively few as compared with other insect groups such as aculeate Hymenoptera (Sk. YAMANE, 1983), butterflies (YUKAWA, 1984) and termites (ABE, 1984), because the time devoted to the collection of moths was limited. In addition, the species identifications have not yet been performed for some moths. Therefore, this paper only lists the moth species together with their collecting data and brief remarks to contribute anything to the knowledge of the insect fauna of the Krakataus.

### Survey Areas, Materials and Methods

The Krakatau Islands are situated in the Sunda Strait between Java and Sumatra, Indonesia, and now consist of four islets: Rakata Besar, Rakata Kecil, Sertung and Anak Krakatau (see YUKAWA, 1984 for the map and further details on topography, vegetation and climate of the islands).

The present author involved in the second expedition team visited the islands in October – November 1982 and devoted fully 16 days to the collection of insects. In addition, he also spent three days on Panaitan Island which is about 10 km from the westernmost peninsula of Java and is thought to have been less influenced by the 1883

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\*This study was supported by Grants-in-Aid for Overseas Scientific Research (Nos. 57041044 and 58043044) from the Ministry of Education, Science and Culture, Japan, and by a grant from the Toyota Foundation (No. 81-1-242).

eruption than the Krakataus. Moths were collected by sweeping and at light mainly by the author, and partly by Dr. E. SUZUKI (plant ecologist of the two teams) and Mr. Sk. YAMANE (entomologist of the first expedition team).

These specimens are presently in the collection of the Entomological Laboratory in Kagoshima University, Japan.

### List of the Moths Collected from the Krakatau Islands and Panaitan Island in 1982

In the collecting data recorded below, the names of collectors are abbreviated to JY (=Junichi YUKAWA), SKY (=Seiki YAMANE) and ES (=Eiji SUZUKI). The triangular marks indicate the species which had previously been collected on the Krakataus, the circular indicate those collected on the Krakataus for the first time, and the rectangular indicate those which have never been collected on the Krakataus but were found on Panaitan in 1982.

#### Choreutidae

- 1. *Brenthia* sp.  
Rakata Besar, 31. X. 1982, JY, 1 ♀.

#### Thyrididae

- 2. *Rhodoneura* sp.  
In the forest of Sertung, 12. XI. 1982, JY, 1 ♂.

#### Pyalidae

- 3. *Hymenia recurvalis* (FABRICIUS)  
Anak Krakatau, 8. XI. 1982, JY, 3 ♂♂, 1 ♀; Peak of 151 m on the rim of outer crater of Anak Krakatau, 13. XI. 1982, ES, 1 ♀.
- 4. *Nacoleia* sp.  
Rakata Besar, 26. X. 1982, JY, 1 ♂.
- 5. *Pyraustine* sp.  
Sertung, 14. XI. 1982, JY, 1 ♀.
- 6. *Endotricha* sp. (near *ignealis* GUENÉE)  
Panaitan, 18. X. 1982, at light, JY, 1 ♀.
- ▲ 7. *Etiella zinckenella* (TREITSCHKE) (= *Zinckenia fascialis* CRAMER : DAMMERMAN, 1948).  
Peak of 151 m on the rim of outer crater of Anak Krakatau, 13. XI. 1982, ES, 3 ♀♀.

#### Ctenuchidae

- 8. *Syntomis pentazonata* HAMPSON?  
Beach of Sertung, 8. VII. 1982, SKY, 1 ♀.

#### Noctuidae

- 9. *Ophiusa coronata* (FABRICIUS)  
Panaitan, 20. X. 1982, at light, JY, 1 ♂; Sertung, 4. XI. 1982, at light, JY, 1 ♂; Sertung, 7. XI. 1982, at light, JY, 1 ♂.

- ▲ 10. *Othreis fullonia* (CLERCK) (= *Othreis fillonica* L. [sic] : DAMMERMAN, 1948, p.434).  
Panaitan, 20. X. 1982, at light, JY, 1 ♂ ; Sertung, 4. XI. 1982, at light, JY, 1 ♂ ; Sertung, 7. XI. 1982, at light, JY, 2 ♂ ♂.
- 11. *Loxiodes* sp.  
Rakata Besar, 31. X. 1982, JY, 1 ♀.
- 12. *Rivula*? sp.  
Panaitan, 21. X. 1982, JY, 1 ♂.

### Remarks

According to DAMMERMAN (1948), the cumulative number of moth species collected on the Krakataus amounted to about 130 by 1934. The actual species number markedly increased from four in 1908 to 66 in 1922, a similar increase having been noted for other insect groups (DAMMERMAN, 1948). A change in the number of moth species from 66 in 1921 to 71 in 1931 – 1933 was not prominent in an appearance, but it involved many turnover events: 45 species were lost and 50 gained.

A total of 12 moth species were collected in the 1982 surveys. Four of them were captured on Panaitan Island and 10 on all the Krakatau Islands taken together. These numbers were not adequate to discuss something about changes in the species numbers from 1931 – 1933 to 1982. However the 1982 moth collection showed that the relative abundance of previously recorded and unrecorded species on the Krakataus was 2 : 8 (▲ : ● in the list). This seems to indicate the possibility that relatively many species have been added to the moth fauna of the islands since 1931 – 1933. As has been noted for the butterfly fauna of the islands (YUKAWA, 1984), the colonization of the Krakataus by moths may have largely depended on the presence or absence of their host plants. WHITTAKER *et al.* (1984) predicted that a progression to the status of primary rain forest with its implied diversity of species is clearly a very long way off. If their prediction is taken into account, the species number of moths, like butterflies (YUKAWA, 1984), will still continue to increase in the future in accordance with the vegetational succession.

### Acknowledgements

The author would like to express his sincere thanks to the Indonesian Institute of Sciences and Dr. H. TAGAWA (Kagoshima Univ., Leader of the two expedition teams) for giving him an opportunity to study the insects on the islands. The moths other than Pyralidae and Choreutidae were identified by Dr. M. OWADA (Nat. Sci. Mus., Tokyo), Pyralidae by Dr. Y. YOSHIYASU (Kyoto Pref. Univ.) and Choreutidae by Dr. Y. ARITA (Meijo Univ.), to whom the author is deeply indebted. Thanks are also due to Mr. Sk. YAMANE and Dr. E. SUZUKI (Kagoshima Univ.) for their kindness in offering some specimens.

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## 摘 要

インドネシアのクラカタウ諸島およびパナイタン島で採集された蛾類（湯川淳一）

ジャワとスマトラの間のスンダ海峡にあるクラカタウ諸島とパナイタン島で採集された蛾類 12 種をリスト・アップした。この報告は、クラカタウ島が 1883 年に大爆発を起こしてから、ほぼ 100 年目に当たる 1982 年に行われた昆虫相の回復状況の調査結果にもとづくものである。採集された蛾の種類数は少なかったものの、クラカタウ諸島から初めて記録されたものが全体の 80% を占めた。このことは、ダンメルマンが調査した 1931–33 年以来、かなり多くの種がクラカタウ諸島に移住してきたことを示唆するものと考えられた。また、蝶の場合（YUKAWA, 1984. *Tyô to Ga*, **35**: 47–74）と同じように、蛾の種類数も、植生の遷移に伴って、今後増加することが予想された。